



International Dioxide Inc.,
A Wholly owned Subsidiary of Engelhard Corp
554 TEN ROD ROAD
NORTH KINGSTOWN, RI 02852
1-800-477-6071

Aseptrol™ Deodorizing Tablets

What Aseptrol™ deodorizing tablets do

Aseptrol™ deodorizing tablets release chlorine dioxide when dissolved into water. Chlorine dioxide has demonstrated efficacy as a broad spectrum, bactericidal, fungicidal, and a virucidal agent. Numerous microbiological studies verify the triple-threat ability of this powerful compound.

Chlorine dioxide has also proven its' ability for odor control, microbiological control, disinfection, sanitization, and pollutant oxidation. Because of its broad capabilities, many industries have adopted its use. Typical applications and industries include food processing plants, pulp and paper facilities, municipal water treatment plants, rendering plants, once-through and re-circulating cooling water systems and a variety of facilities with general wastewater treatment needs. Emerging markets include, disinfecting water used to wash uncut fruits and vegetables as well as prolonging the shelf-life of fruits and vegetables when used in grocery stores.

Chlorine dioxide is a safe, stable, multi-functional compound, which exists as a gas. Historically, the use of chlorine dioxide found its' roots as a gas dissolved in water for industrial applications. In 1998, however, International Dioxide, Inc. (IDI) introduced its breakthrough technology in chlorine dioxide delivery systems with its complete line of solid pre-cursors to solution (SPS) deodorizing tablets and controlled sustained release products (CSR), thus changing forever how this efficacious chemical can be utilized. This unique IDI technology now allows for the safe and effective generation of chlorine dioxide, a gas which is released via our effervescent tablets into solution (SPS) or via our sachets into the air (CSR), attacking odors at their source.

How Aseptrol™ technology works

Simply drop our effervescent tablets into water. Within seconds these tablets dissolve and produce a solution of chlorine dioxide. The chlorine dioxide generated then selectively seeks out and destroys unpleasant and unwanted odors at their source.

Unlike conventional deodorizers which absorb or cover-up odors with fragrances, IDI's deodorizing tablets effectively oxidize compounds such as hydrogen sulfide, mercaptans, organic amines, and odors produced by mold, mildew, tobacco smoke, spoiled food, and human and animal wastes.

What is oxidation and how chlorine dioxide oxidizes

Chlorine dioxide's principal chemical reaction with components is through oxidation and not by substitution. Chlorine dioxide reacts with other molecules by "stealing" electrons from them (oxidation) and thereby breaking molecular bonds.

In microorganisms, disulfide bonds hold protein molecules together. These microbial disulfide bonds just happen to contain electrons that are also very easily "stolen". When this occurs, protein synthesis and the proteins themselves are altered. Most importantly, microbial proteins involved in the structure and enzymatic function are broken, causing very rapid bacterial kills. This oxidative attack on so many proteins simultaneously is the reason why chlorine dioxide is so potent and why the cells are unable to mutate to a resistant form.

In odor control, hydrogen sulfide or other sulfide-containing bonds are readily oxidized by chlorine dioxide. These bonds contain electrons that want to be "stolen" and ultimately, render the final



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compound into an odorless form. Again, chlorine dioxide works rapidly to destroy these odor-causing compounds.

In the oxidation process, chlorine dioxide undergoes a one-electron change to produce chlorite ion. Depending upon the pH and the substrate being oxidized, an additional four-electron change can occur producing chloride ion as the final product of the reaction.

Aseptro™ deodorizing tablets are versatile

Chlorine dioxide selectively oxidizes compounds in a specific order of preference. Chlorine dioxide easily oxidizes hydrogen sulfide, inorganic compounds, microbiological compounds, and organics, respectively.

Limitations of chlorine dioxide

As with any product, there may be certain odors that chlorine dioxide will not eliminate. Odors associated with ammonia, ammonium or other primary amines are not readily oxidized by chlorine dioxide. Although chlorine dioxide will not oxidize these compounds, if applied correctly, will help to eliminate the formation of ammonia compounds before they have a chance to become odoriferous.

Aseptro™ Summary

Not only are Aseptro™ based products environmentally and ecologically safe, they have almost unlimited applications. In tablet form, they will effectively deodorize areas laden with sulfur-containing compounds. In sachet form, they will eliminate the smell of smoke in a smoker's car and reduce the musty odor in any compartment that has been adversely effected by water or has been water damaged. Furthermore, Aseptro™ is designed to oxidize air-born odors and help improve the air quality that you breathe.

Mold, mildew, food odors, tobacco smoke and pet odors are among the odor producing compounds that are easily oxidized by Aseptro™ deodorizing products. These products come in tablet, film or sachet form and depending upon the formulation, can release chlorine dioxide for months! But don't just take our word for chlorine dioxide's versatility and value, try an Aseptro™ based product and see for yourself. You'll be glad that you did.